US Army Corps
of Engineers

HEADQUARTERS
DIRECTORATE OF CIVIL WORKS &
DIRECTORATE OF MILITARY PROGRAMS

ENGINEERING & CONSTRUCTION NEWS

Volume I Number 3 March 1999

THIS PUBLICATION WILL BE ISSUED ON A MONTHLY BASIS & DISTRIBUTED BY E-MAIL & POSTED ON THE INTERNET AT
http://www.hq.usace.army.mil/cemp/c/cemp-c.htm & http://www.usace.army.mil/inet/functions/cw/.
IF YOU WOULD LIKE TO CONTRIBUTE ARTICLES OR HAVE SUGGESTIONS FOR FUTURE ARTICLES,
PLEASE CONTACT DENISE MASSIHI, CEMP-EC, 202-761-1380 OR CHARLES PEARRE, CECW-EP, 202-761-4531

MARCH'S THEME: Partnering

CARL'S NOTES

In our last issue of "E&C News", we discussed initiatives that Dwight and I were pursuing with AGC on Partnering both at the strategic level and project level. While our partnership with AGC is formal, there are many opportunities for informal partnering with industry and other Federal/State agencies. One good example of this in the dam safety area, our informal partnership with the Association of State Dam Safety Officials (ASDSO) is a valuable tool that is used to provide training opportunities for Corps personnel, to obtain information from all of the states, and to share new technology. Other organizations that can serve as valuable partners are SAME, NSPE, ASCE, and ACEC. Most of the organizations have local chapters near many District/Division offices. I recommend that you encourage your staff to participate in the activities of these organizations. Additional benefits of working with industry and professional associations are the networks that are established which may provide future marketing opportunities for the Corps.

On 9 Feb., the Chief of Engineers sent the MSC Commanders a message concerning Civil Works program execution for this fiscal year. While we have made a new start on our private sector contracting, the Corps overall program has over a billion dollars unscheduled. As significant contributors to and integral members of the project delivery team process, the Engineering and Construction elements must take an active role in the development of their District's program execution plans. We have made commitments to the Congress and if we do not keep those commitments, our program will begin to deteriorate instead of growing. As the Commanders seek ways to improve program execution, opportunities for the engineering and construction staff to take the lead in improving performance will be created. I encourage you to be aggressive in pursuing those opportunities using your staff and your private sector contracting partners. This may, also, be an opportunity to fund some of the seismic studies and other dam safety work that need to be completed but have not been funded through the regular budget process.

CARL'S NOTES (CONTINUED)

On 8 Feb., we met with the Director of Civil Works to discuss private sector contracting Mr. Michael Bart (CENWK-PE-P) presented the recommendations for the task force. MG Fuhrman concurred with the proposal to move from a functional organization based method to a product based method for reporting performance. The Director indicated that he was pleased with our past performance and that maintaining an overall 40% contracting level should not be a problem given the current program levels. I furnished the Director a discussion paper to brief the Chief on the proposal. As soon as we receive concurrence from the Chief, we will provide new guidance for tracking private sector contracting. Until that letter is issued, you should continue to track performance with the formula that was used for FY98. In addition it is recommended that you become familiar with the Cost of Doing Business Report and the elements of that report that include planning, engineering, and design products.

Charlie Baldi (CECW-EP) will be establishing a PAT team to prepare a USACE (CW & MP) Quality Management (QM) Regulation. The objective is to combine the current four separate discipline QM regulations into ONE that will cover all USACE disciplines. We are looking for a few good participants to be on this PAT from each MSC and each discipline in HQ from CW and MP. A request for MSC representation will be out in early March.

Kristine Allaman and I along with MG Anderson, Mississippi Valley Division Commander, and Colonel Robert Crear, Kansas City District Commander, attended the NSPE Engineer of the Year luncheon on 25 February. Mr. George Sill, P.E., Vicksburg District, was recognized as one of the Top Ten Federal Engineers of the Year at that function. This event helped conclude a great week of events in the DC area aimed at celebrating our profession.

DWIGHT'S NOTES

I'm encouraged by several recent developments in the E&C arena which support our objectives for technical excellence in the Army Corps of Engineers. A consensus has been forming that the Corps needs to reaffirm the strategic importance of our technical capability and will invest in the tools our engineers, scientists, and technicians need to be effective. Last month I mentioned how our technical reputation has opened doors for the Corps to "Seek Growth Opportunities". I'd like to give you a few examples.

The first capability I'd like to highlight is Construction Management. Our positive reputation with Housing and Urban Development (HUD) was earned through the solid CM support we provided HUD regions in their housing construction grants program. The Corps served, essentially, as HUD's eyes and ears on the ground. This experience has led HUD to enlist the Corps' support in other areas, most recently Brownfields. We're close to agreement with HUD on a national MOA for Brownfields assistance, which when coupled with new Brownfields funding being made available to the Corps from EPA, will help the Corps assist states and communities through established programs of other federal agencies.

Our technology infusion capability was showcased on 26 February during a very productive visit by high-ranking State Department officials to the Waterways Experiment Station. The Corps unequaled force protection expertise at WES, Huntsville Center, and Omaha

DWIGHT'S NOTES (CONTINUED)

District captured the interest of the State Department that is wrestling with a big program to upgrade the security of embassies around the world. Coincidentally, the State Department's new Value Engineer Officer came over to talk to Mike Holt, our VEO, about providing VE assistance on an international scale for some of their projects. We also invited the State Department to join the Hammer Award Winning Tri-Service CADD/GIS team, run by the Corps at WES. This technological capability will facilitate the Corps and State to develop a closer relationship which, we hope, will eventually lead to their relying on the Corps for a full range of our services.

The value of our technical expertise also has a strong supporter in the Chief of Engineers. At a recent breakfast meeting of the American Consulting Engineers Council/National Society of Professional Engineers General Ballard defended the Corps limited, yet highly capable in-house design capability. In his prepared remarks the Chief advised industry that the Congress expects the Corps to maintain essential technical capabilities to ensure we "know what quality looks like... to evaluate alternatives for our customers... and to develop government policy, programs and guidance based on expert knowledge in design engineering." He concluded his remarks by vowing: "the Corps will never become a pass-through organization. The design work that we do in-house maintains our expertise to scope, cost and evaluate the quality of work performed by our private sector partners."

I'm certain that you can relate countless examples of how well the Corps technical expertise serves us in becoming the engineering organization of choice. We must take the Chief's message on in-house capability to heart. The Corps will continue using the private sector, as before, where that is the right thing to do. Yet we will not abandon our responsibility to the public in the process. Our challenge, now and into the next century, will be to identify the set of technical capabilities that will continue to be valued by our customers and that are within our means to hire, train, develop, and retain. This need for continuous "human infusion" into the Corps will lead us to closer partnerships with universities and the private sector as we search for common ways to maintain a healthy Army Corps of Engineers while sharing the limited supply of technical talent.

ARTICLES

ARTICLES (CONTINUED)

PROGRAMS MANAGEMENT DIVISION ARTICLE ON "PARTNERING"

The U.S. Army Corps of Engineers (USACE) is committed to a partnership with the National Missile Defense Joint Program Office (NMD JPO) to design and construct tactical and non-tactical facilities for a new ballistic missile defense system. This new system is designed to protect the United States against limited ballistic attacks. The schedule is extremely tight and offers one of the biggest challenges to the USACE in recent history. The USACE agreed, within the NMD partnership framework, to work together to meet design and construction program goals within budget and on schedule regardless of program direction. The deployment decision will be made in the year 2000. In the meantime, the USACE must be prepared to execute this deployment decision with designs for multiple sites.

In early February, USACE representatives from the headquarters, Huntsville Engineering & Support Center, Cold Regions Research & Engineering Laboratory, Northwestern Division, Pacific Ocean Division, Alaska District and Omaha District partnered, with the help of a facilitator. The goal was to form a seamless USACE organization to support the NMD program and to commit their respective organizations to a mutual investment in each other's success. A partnering agreement was signed after two days of hard work resolving issues.

A brief summary of the USACE roles and responsibilities follows: The headquarters will provide overall policy, direction, resourcing, and approval of acquisition strategy. The Huntsville Engineering & Support Center (CEHNC), will provide a Program Manager, jointly located with NMD JPO, for coordination among the NMD JPO system deployment project managers and all USACE activities. The CEHNC is responsible for overall execution and specifically for the design of tactical facilities. Alaska District and Omaha Districts are responsible for design of non-tactical facilities, real estate activities, environmental assistance, permitting, and construction. You say – what's new? We believe we developed the model partnering process for the 21st Century Corps of Engineers, where we work together, with leadership, flexibility, mutual trust, respect, honesty, cooperation and openness to achieve our goals.

POC: DAVID L. CHAMBERS, P.E., CEMP-MD, 202-761-0641

Return to Index of Articles

REQUESTS FOR CORPS ASSISTANCE FROM INDIVIDUALS FROM OTHER COUNTRIES

What do you do if an individual, from a foreign country, approaches you asking if the Corps can do work for his/her country? The simple response is that we may be able to assist, if DOD and State Department concur, and the country agrees to certain conditions. An agency of that government should send a letter of request to the US Embassy in their country. Here is further information that will guide you on how to respond.

Section 607 of the Foreign Assistance Act of 1961 (FAA) allows Federal Agencies to sell services to civil agencies of friendly foreign governments for developmental purposes including water resources, environment, and infrastructure.

The process is as follows: The host country sends A Letter of Request to the US Embassy in country. The Embassy endorses the letter and sends cables to the Department of State (DOS) and DOD with a copy furnished to the appropriate Corps District notifying them of its endorsement. The District informs CECS-I of the request and drafts a request for a 607 determination to the appropriate agency (DOS or AID). The DOS or AID provides a determination that the support is consistent with Section 607 of the FAA to the District. The District then drafts a Letter of Offer and Acceptance (LOA) which contains scope and costs and the appropriate standard general provisions and forwards it with the 607 determination to CECS-I. CECS-I, upon review and signature forwards the action to the Army, which forwards it to the Defense Security Cooperation Agency (DSCA). DSCA processes the action, provides it to DOS for review, then returns the action to the District for staffing in the requesting country.

For further information, contact Ann Castiglione-Cataldo in Mobile District.

POC: DONALD KISICKI, CECS-I, 202-761-4273

Return to Index of Articles

USACE/ACEC PARTNERING ON INTERNATIONAL WORK

USACE and the American Consulting Engineers Council (ACEC) have formed a task force to examine ways to improve the Corps' ability to support U.S. firms on international projects. Representatives of the Federal Highway Administration, the Tennessee Valley Authority, and the Associated General Contractors are also participating in the effort. The task force met initially on 5 January 1999 and again on 24-25 February 1999.

The Water Resources Development Acts of 1988 and 1990 (33 USC 2314) authorize the Corps to provide technical assistance to American firms on design, engineering and construction projects outside of the United States. However, due to its inherent limitations, this program has not been fully utilized. The task force is considering several operational and legislative changes to increase the Corps' authority and flexibility as a partner on overseas work.

The task force's recommendations include:

- Determine how other nations support their private sectors in seeking work abroad, and adopt their successful practices.
- Develop a strategic plan to promote the Corps' technical assistance capabilities.
- Give USACE authority and funding for marketing and proposal development.
- Allow work to be performed on a reimbursable basis (instead of paying in advance).

USACE/ACEC Partnering on International Work (continued)

- Soften or eliminate the certification that the assistance required from the Corps is not reasonably and expeditiously available from the private sector.
- Broaden the type of support the Corps can provide.
- Investigate ways for the Corps to insure itself so that it can assume some of the risk as a partner.

The Corps is very interested in partnering with U.S. firms on international work. It is consistent with our vision and missions. Specifically, partnering with U.S. firms on technical assistance agreements:

- Allows us to sustain and enhance our core competencies.
- Supports the National Security Strategy and the National Military Strategy by performing projects which promote security, prosperity and democracy.
- Supports the programs of other U.S. agencies.
- Promotes the U.S. engineering and construction industry.

We will keep you informed on the progress of the USACE/ACEC international task force and the implementation of their recommendations.

POC: Don Evick, CEMP-EC, 202-761-1053

Return to Index of Articles

Partnering On Architect-Engineer Contracts

Although partnering was originally developed for application to construction contracts in the Corps, it also has been shown to be very beneficial on A-E contracts. Appendix B of ER 1110-1-12, Engineering and Design Quality Management, provides some useful guidance on A-E partnering. Also, the American Institute of Architects and the American Consulting Engineers Council (with USACE collaboration) have jointly published an excellent how-to manual entitled "A Project Partnering Guide for Design Professionals," which is available from their bookstores. Most project managers and technical personnel appreciate the benefits of partnering on A-E contracts, but are not certain how to pay for it.

The Government and the A-E firm should discuss their interest in a formal partnering agreement during contract negotiations. However, partnering does not begin until after contract award. Since it is voluntary, a firm is not specifically paid for partnering on its contract. Typically, the Government (using project funds) and the A-E firm share the costs of partnering. The A-E firm can usually justify its partnering costs in terms of fewer delays and less problems (hence, increased profitability) throughout the project due to the cooperative environment fostered by partnering. If a firm doesn't see that benefit, then partnering shouldn't be pursued. Further, the level of partnering should be appropriate for the magnitude and complexity of the project.

PARTNERING ON ARCHITECT-ENGINEER CONTRACTS (CONTINUED)

An A-E firm may be directly compensated for participating in partnering meetings during construction when the firm's attendance is necessary to discuss design intent, scheduling considerations, construction methods or similar project issues. Partnering meetings should be scheduled concurrently with required meetings, such as the preconstruction conference, to minimize costs. The scope of A-E services should be written in terms of the specific areas of required support (with tangible deliverables), instead of a general requirement to participate in partnering.

POC: DON EVICK, CEMP-EC, 202-761-1053

Return to Index of Articles

DAM SAFETY PARTNERING (ICODS AND ASDSO)

The Interagency Committee on Dam Safety (ICODS) and the Association of State Dam Safety Officials (ASDSO) are two prime examples of successful partnering in the dam safety arena. The Corps' continued success in our dam safety mission has been greatly enhanced by these partnerships.

ICODS is a group of ten Federal agencies who build, own, operate, or regulate dams. ICODS provides the permanent forum for Federal leadership on institutional, managerial, technical, legislative, and policy issues affecting dam safety. ICODS was created in 1980, and codified in WRDA 1996. The Corps represents the Department of Defense on ICODS, with our Dam Safety Officer (Carl Enson) as the Army representative. Among its responsibilities, ICODS sponsors research, and host technical training which is made available free of charge to Federal agencies, the states, and academia. Another area where ICODS works closely with the Corps is through the Subcommittee for the National Inventory of Dams (NID), which helps the Corps set the direction for improvements to the NID.

ASDSO is a national, non-profit association dedicated to the improvement of dam safety through research, education, and communication. ASDSO hosts annual conferences, which provide a forum for technical exchange. Corps dam safety engineers are encouraged to present papers and to attend these national conferences. ASDSO also collaborates with ICODS and the Corps on many matters relating to national dam safety, including providing ASDSO representatives on the ICODS NID Subcommittee and other subcommittees. Anyone interested in becoming an ASDSO member can visit the website at: http://members.aol.com/damsafety/homepage.htm.

POC: ROBERT BANK, CECW-EP, 202-761-1660

Return to Index of Articles

PARTNERING - CIVIL WORKS AND ARMY BRIDGE SAFETY PROGRAMS

The PL 100-17, 23 U.S.C. 151, "National Bridge Inspection Standards" (NBIS) requires Federal as well as state and local agencies to inspect each bridge biennially on all public roads under their jurisdiction and to report the related data for inclusion in the Federal Highway Administration's (FHWA) National Bridge Inventory. The Army, CEISC and Civil Works, CECW-ET have been working together on bridge safety programs to meet the NBIS requirements since 1995. We recently co-sponsored a bridge inventory (CEBIS) workshop on 9-11 February 1999 in Reno, Nevada. The participants were engineers from Navy, Army, Nevada

DOT, FHWA and Corps. Messieurs Zen Jao of FHWA and Marc Grunert of Nevada DOT conducted the bridge inventory workshop without cost to the Corps. Mr. Wayne Dahl and Mr. Gerardo Velazquez of CEWES also served as workshop instructors. The CEBIS was developed by Mr. Jao and has been used by Corps since1992 and later has been adapted by the Army since 1996. Navy has expressed its interest in sharing the cost for CEBIS and the Bridge Inspector's training workshop. I obtained information from Mr. Grunert for Nevada's cost per bridge and inspection report format that he uses for his bridge inspection contract. This information will be used for updating ER 1110-2-111 to help to reduce cost for district bridge inspection.

Mr. Larry Black of ACSIM, Mr. Mike Dean of CEISC, Mr. Paul Tan of CECW-E and Mr. Cecil Goodwin of HQTRADOC met after the workshop to discuss issues related to the Army installation bridge safety inspection and inventory program. The results of the meeting are: 1) Army and Civil Works will continue to provide funding for maintaining and updating the CEBIS, and bridge inspector training workshop; 2) Paul Tan will provide assistance to ACSIM, CEISC and Army MACOM's on implementing the Army bridge safety program and to develop a standardized inspection report format to reduce costs for Army installations and districts; and 3) Mr. Tan will contact FHWA about the possibility of receiving matching funds from Federal Lands Highway Office (PLH) for the Army Bridge Safety Program.

PLH already has authorized funds of $400,000 for administration and oversight of the Civil Works Bridge Safety Program. Some of these funds will be used for managing PLH funds, maintaining and updating CEBIS, and providing bridge safety training workshops. CEWES-IM will establish an account and distribute the remaining funds to districts through the MSC's.

POC: PAUL TAN, CECW-ET, 202-761-8671

Return to Index of Articles

ACQUISITION AND PARTNERING

Acquisition and Partnering are two words not normally used in the same sentence. We often think of acquisition (at least developing the strategy) as something that happens before a contract is advertised and awarded, while partnering is done (with the construction contractor) after award. In fact, acquisition is the timeline process preceding and continuing over the life of a contract, and partnering is something that can (and should) begin, among the District team members, long before the construction contractor is chosen.

Recently, the Association of General Contractors (AGC) met with senior Corps leaders to discuss ways to improve and enhance the Partnering Process. I was one of two representatives of the Baltimore District at that workshop; we were joined by Vernon Perdue, a Project Manager for the Fru-Con Corporation, our construction contractor for a portion of an ongoing levee raising project on the Susquehanna River. Our joint discussion centered on ways in which Partnering has helped us to move this project forward. One of the examples we cited was our joint efforts to stabilize and repair a slide which occurred in December 1998, just as we were preparing to suspend operations for the winter. Both Fru-Con and the Government realized that working on the water during the winter months would be unpredictable. We also realized that if we did not stabilize the slide it might continue, essentially cutting the project in half, and jeopardizing our chances of completing the project in 1999.

In order to address the problem and mitigate future damage, our District drill crew and design team mobilized to investigate the slide within 24 hours. Within two days, we had enough design data to begin discussions with Fru-Con on a proposed scope of work. We also decided to utilize the authorities and quantities within our existing unit price contract to place some rockfill immediately adjacent to the slide, arresting the movement until we could complete our investigation and design activities. By Day 4, using some survey information and design suggestions supplied by Fru-Con, our Engineering Division was able to produce sketches, which we used to determine quantities and prepare a Government Estimate and our Pre-Negotiation Objectives. Meanwhile, Fru-Con began preparation of their cost proposal.

On Day 5, we met to discuss the scope of the work. We soon determined that the required material quantities and weather constraints could considerably delay the execution of this work. We also identified many environmental and contracting issues which required immediate resolution. One of our assumptions, the use of on-site gravel bars, was deemed unacceptable based on discussions with our Planning Division, because of adjacent Peregrine Falcon (an endangered species) habitat. This necessitated another look at the designed remedy, and revisions to both the Government and Contractor's pricing. By direct contact with (and site visits by) the members of our project management, design, environmental, legal, acquisition, and construction team, we were able to resolve all of these technical and regulatory concerns by Day 12.

On Day 19, we were ready to negotiate a forward-priced supplemental agreement for slide repairs. We were quite surprised by the low production rates assumed by the contractor. Through discussions, we ascertained that the contractor's concerns were based on the high risk associated with performing work in the river during unpredictable winter weather. Since the barges and much of the necessary equipment would be rented, the cost of standby became a very large consideration. We resolved this issue by essentially removing the risk of weather delay. We negotiated a standby (unit) rate, and stipulated conditions under which that rate would be employed, to compensate Fru-Con for this contingent item. We realized a lower unit price on the basic rate as a result.

With a forward-priced agreement in place, Fru-Con began work on slide repairs 20 days after the first cracks were noted. As of this writing (mid January) the work is 90% complete, and we expect to be finished by mid-February. Thus far, we have only had to implement one compensable standby day, despite the fact that we have experienced three weeks of extreme cold, snow, and ice. We believe that by working jointly with our District partners and with Fru-Con, we were able to avert major technical, cost and time impacts to the project in the next construction season. More importantly, we will be able to provide increased levels of flood protection to the residents of Wyoming Valley during the annual spring high water season.

This achievement occurred because of effective partnering effort among the various District elements, the local sponsor, and the construction contractor at the mid-point of an existing construction contract. It is a prime example of the success that arises from the continuation of effective partnering throughout the acquisition - the cooperation to develop and integrate engineering, environmental, construction, financial, risk, and contracting considerations to

achieve the best results for all parties. Acquisition is more than just advertisement and award; partnering is more than just a day away from the job. When acquisition strategy and the trust that is built by partnering work well together, we have a win-win situation.

POC: JIM MOORE, CENAB-COF-HTS, 717-895-7052

Return to Index of Articles

VALUE ENGINEERING (VE) TO PARTNER AND SEEK GROWTH

Value Engineering and smart District Commanders continue to open doors for the Corps. The Office of the Chief of Engineers Value Engineering Study Team (OVEST) was recently requested by name to perform VE for the Department of Energy (DoE) on its underground portion of the Neutrino Main Injector Facility. This work was within Chicago District boundaries, leading OVEST to insist that funding flow through this district. This triggered a new Memorandum of Understanding between Chicago District and the U.S. Department of Energy, formally introduced the District to a potential future customer, and assisted the District in the development of a personal relationship with this customer through active participation. The District Commander opened the study to help ensure that Chicago Value Engineering and OVEST turned out to be an exceptional combination. The alliance provided over $7 million in accepted proposals, numerous project improvements on this $50 million portion of the project, helped DoE comply with the Law and Office of Management & Budget Directives, and left a very satisfied customer. The methodology always works. Compliance with VE policy is smart. Nice job by all!!!!!

POC: MICHAEL HOLT, CEMP-EV, 202-761-8738

Return to Index of Articles

PARTNERING WITH NASA ON MARS AND BEYOND

Mr. Michael J. Klosterman, Chief Geologist, CECW-EG participated in a workshop on Revolutionary Drilling Technologies sponsored by the National Advanced Drilling Technology Institute. The workshop was held 27-29 January in Washington, D.C. The catalyst for the workshop was the need to identify drilling technologies needed to drill for water and sample for biologic life on the NASA Mars landing missions. Daniel Goldin, the Administrator of NASA and Sandra Waisley, an Assistant Secretary of DOE were major contributors to the workshop. Mr. Goldin indicated manned drilling on Mars could begin by 2010. Mr. Klosterman presented an overview of the Corps in-house, Contract, and R&D interests, activities, and needs in drilling, sampling, and exploration. Strong synergy between the Corps and other federal agencies, national laboratories, and private industry was revealed in the areas of engineering geophysics and CPT/SCAPS technologies. The new technology of high-pressure water/gas jet drilling appears commercially applicable to Corps problems.

POC: MIKE KLOSTERMAN, CECW-EG, 202-761-8682

Return to Index of Articles

FIRE AT EL CAJON HYDROELECTRIC POWER DAM

Early Friday 12 February 1999 the Mobile District began working on responding to a request for emergency assistance from USAID Honduras in reference to the disaster at El Cajon Dam. Funding authority for this action was passed to Office of Foreign Disaster Assistance (OFDA). OFDA needed someone on the ground on the next day (Saturday, 13 February). In coordination with HQ the district used the same mechanism that HQ used to help us support the World Bank with the Honduras landslide so we could get someone on the ground fast. The letter of agreement was signed at 1830 hrs on Friday and the CESAM team deployed to Honduras on Saturday. The team consisted of Ed Harris, Chief of Hydropower, and Danny Tree from West Point Dam, Chief of Hydropower Testing. An U.S. Coast Guard STRIKE Team was also deployed.

The El Cajon Hydroelectric Power Dam located 50 miles SE of San Perdro Sula is a 741-foot high dam, which provides approximately 70% of the power for Honduras. It has an installed capacity of 300 MW with four units of 75 MW each. The powerhouse, which is constructed underground, was designed by Motor Columbus of Baden, Switzerland.

At approximately 7:00 P.M. on February 11, 1999 an electrical explosion and ensuing fire event occurred at the powerhouse. Unit No. 4 was tripped off line by differential protection. Fire fighting units from the U.S. Military located at Soto Cano Airbase were deployed. On entering the facility, oil and smoke were observed and some burning sounds were evident. Automatic CO2 fire suppression systems were deployed manually at that time (they had not deployed automatically). Initial damage reports indicate that damage is most severe at unit #4. Cable damages were also reported at the other 3 units. The operational status of the power transformers was questionable at that time. All production units are off line and damaged. However, station power was available.

When the STRIKE Team arrived on site they discovered that the #4 Transformer was still on fire. They were able to extinguish this fire and took action to cool the powerhouse. Our engineers arrived on site at the same time and started studying the engineering plans and providing advice. There are also Mexican technicians on site.

Mike Valladares, COE, and Gilberto Ramos, Administrative Manager of ENEE briefed the team on February 14 before leaving Tegucigalpa for the Plant at El Cajon. They met Raphael Valladares, a Mechanical Engineer at the El Cajon Plant who was our primary contact and acted as an interpreter. Victor Gonzales, a U.S Marine Corp Reservist, acted as the Coast Guard interpreter and helped with clear, instant communications for decision-making onsite. This was a key getting the fire extinguished and the air cleared. They also interfaced with other project personnel to gain information about the power plant and events surrounding the failure: Martin Martinez, Electrical Engineer, Elvis Garcia, Electrical Engineer, and Mateo Castillo, Electronics Engineer. They worked with the U.S. Coast Guard Gulf Strike Team that was directing the extinguishing of the fire, air monitoring for toxic gases and hazardous chemicals, and giving safe entrance clearances to all personnel on site. The team provided the Coast Guard with key information that they needed for materials contained in the transformer, cables and other equipment involved in the fire. They gathered most of this information from as-built drawings and their knowledge of hydropower plants.

FIRE AT EL CAJON HYDROELECTRIC POWER DAM (CONTINUED)

Smoke, heat and toxic gases prevented entry to the powerhouse cavern and HV cable passages until February 17, when we were given clearance to enter by the Coast Guard. We inspected the High Voltage Cable Passages, the Unit 4 Transformer room and nearby areas. It appeared that the Units, Controls, excitation and other auxiliary powerhouse equipment were not damaged other than leaving an oil film and baked ash on everything exposed on the floor where the transformer is located and adjacent floors at multiple elevations. Unit 4 Transformer and all the equipment located in this room were destroyed including the three lightning arrestors, three HV inverted bushings for the 230Kv Cable, three phases of the 13.8Kv bus including enclosures and the transformer accumulator tank. In addition, approximately 1200 meters of cable for Units 1 through 4 were destroyed, melting and burning a majority of the Polyvinylchloride Extruded Jacket with flooding compound, in two HV cable passages above the Transformer rooms. Since the fire burned for three days, the temperatures in the cable passages probably reached 1500 degrees F, according to the U.S. Coast Guard Strike Team. The extreme temperatures caused cracking, spalling, and movement in two expansion joints of the HV Cable Passages. There are a lot of cracks in the concrete floor of the cable passages, primarily in the Unit 3-4 HV Cable Passage and the Unit 1-2 HV Cable Passage near the Unit Transformers that appear to be 15 cm or more deep. In addition, all lighting fixtures, two power panels, wiring in conduits embedded in the concrete walls and smoke detectors were destroyed in the HV Cable Passages.

From our analysis of the printed record of events, examination of the drawings and manufacturer's information, and visual inspection of the Unit 4 Transformer room and HV Cable Passages the team formulated the following as the probable cause of failure. Unit 4 transformer had a fault that was close to the phase bushing closest to access tunnel differential CT, which is in the cable differential zone of protection. This caused the transformer to explode without picking-up the transformer differential relay and without setting off the CO^2 protection for the room. It did however pick-up the Buchholtz relay on the transformer for sudden pressure, an indication of an internal explosion in the transformer. The explosion blew the inverted bushings above the transformer from the ceiling, exposing three holes through the ceiling, exposing the HV cables and HV Cable Passages above to burning oil, flames, and heat. This assumes that the Transformer Differential Relay was in working order at the time of the fault.

The CO^2 fire suppression systems do not appear to be adequate to take care of a fire on the transformers. Since there is already a sump beneath the transformer, a chilling sump could be formed containing the correct size rock to extinguish oil that might burn from an explosion. Also, a water fogging system instead of the CO^2 system could be designed to extinguish a fire on the transformer. This water fogging could also be placed in the HV Cable Passage above the openings to the transformers to prevent fire from spreading to the cable area. It is important that in these water fogging systems that the drainage flow and containment of the water and oil contaminates be adequate in capacity, and safety (to other installed equipment) in flow-control to an area for proper disposal. It is also suggested that the HV Cable Passage have forced ventilation installed. When the 230 kV cable is replaced to all unit transformers, which will require approximately 12 Kilometers of cable, it is recommended that each run be continuous. It is also recommended that when the spare transformer is installed to replace Unit 4 Transformer

FIRE AT EL CAJON HYDROELECTRIC POWER DAM (CONTINUED)

that it be thoroughly cleaned and tested. Also, a new spare should be procured to replace the spare installed for Unit 4 Transformer. It is suspected that ENEE may need help to develop Plans and Specifications to contract the purchase of the new cable, spare transformer, and make changes to the fire suppression systems as discussed above. This could also include putting Unit 4 Transformer back in service with its associated switchgear and associated damaged equipment. The total damage to this switchgear is unknown at this time.

Technical ideas and knowledge concerning the fault and repair were discussed at the project. As promised the team will provide technical ideas and knowledge as pertinent ideas and material presents themselves through Mike Valladares, COE and Gilberto Ramos, ENEE. A report with more in-depth information can be obtained from the Mobile District (CESAM-OP). Further information can, also, be obtained by contacting Danny Tree at (706) 643-0313 or Ed Harris.

POC: LAWRENCE E. (ED) HARRIS, JR., CESAM-OP, 334-690-2586

Return to Index of Articles

EPOXY PIPE COATING, ELMENDORF AFB, AK

Due to the initiative of the Alaska District, an innovative solution is now being effected for an unusual technical problem concerning water supply piping for a major new facility at Elmendorf AFB. Water in the Anchorage area is very "aggressive," i.e., it readily attacks and corrodes metal piping. Water from fixtures in the facility had a high metallic content. Particularly noticeable was a reddish color due to the presence of oxidized iron. Alaska District called in the Construction Engineering Research Laboratory (CERL) to investigate and recommend corrective actions. Replacing all steel piping would be prohibitively expensive and very time-consuming, not an attractive option as the Beneficial Occupancy Date neared. CERL recommended an "in situ" application of an epoxy coating to line the interior of the steel piping. This epoxy lining will prevent any contact with the steel by water flowing through the piping. This is a relatively new process and only a couple of specialist firms are able to install this lining "in situ." Alaska District promptly contracted for the special treatment through a task order contractor. The epoxy lining is currently being installed, and will be completed in just a few weeks at a fraction of the cost of replacing the piping.

PowerPoint slides of the process can be found at http://www.hq.usace.army.mil/cemp/c/cemp-c.htm under **Technical Information**.

POC: PAUL HANREEDER, CEMP-EM, 202-761-1581

Return to Index of Articles

THE USE OF THE BALANCED SCORECARD IN USACE

The Corps is embracing a popular performance management tool in its effort to revise the Command Management Review (CMR). Senior leaders use the CMR to monitor and manage performance in critical program and operating areas. Many of the performance measures currently included in the CMR summarize past performance but fail to look forward so that leaders can anticipate and address problems proactively. The Chief of Engineers has expressed a desire to review performance information early enough to intervene so as to get performance back on track. He has charged teams of senior leaders to look at various dimensions of organizational effectiveness and future planning.

The Strategic Management Board (SMB) is directing this effort. The SMB is comprised of all senior executives and general officers at HQUSACE. They are charged with setting strategic direction. Currently, seven Focus Teams are working to chart the future course for the Corps. The teams are the Integration Team, the Performance Measurement Team, the Outreach Team, the Support the Army Team, the Business Practices Team, the Capable Workforce Team, and the Knowledge and Technology Management Team. The Integration Team is responsible for pulling together the focus and efforts of the other teams. The Performance Measurement Team is responsible for revising the CMR. The Outreach Team is responsible for identifying strategic and future customers and developing outreach plans. The Support the Army Team is responsible for specific outreach to the Army. The Business Practices Team is responsible for recommending improvements and alignments in internal business processes and systems. The Capable Workforce Team is responsible for identifying issues related to ensuring future mission-oriented competencies. The Knowledge and Technology Management Team is responsible for developing and applying knowledge and information management tools to ensure effective mission accomplishment. The Performance Measurement Team's task is to identify which of the current CMR indicators should be retained. The team will also recommend strategic indicators so that senior leaders will get a sense of "lagging" performance indicators, which summarize past performance; and "leading" performance indicators, which highlight potential problems and opportunities early enough to reorient effort.

The Balanced Scorecard (BSC) is a method adapted from the private sector that allows an organization to monitor multiple dimensions of performance. The BSC includes financial information but adds measures dealing with customer satisfaction, internal processes, and the organization's innovation and improvement activities – measures that are the drivers of future performance. USACE is considering four dimensions: Program Results and Mission Growth, Stakeholder and Client Relations, Internal Business Processes, and Innovation and Learning. The Performance Measurement Team is expected to present a new set of performance measures balanced across these dimensions to the "ENFORCE" Army/USACE Engineer Family conference at the Engineer Center and School in Fort Leonard Wood, MO in late April of this year.

POC: Donna Ayres, CEWRC-IWR-A, 703-428-6291

Return to Index of Articles

WEB PAGE INFORMATION FOR PROSPECTIVE CONTRACTORS

We receive frequent inquiries from construction contractors requesting information on how they can get on bidders lists for Corps construction contracts. In order to provide one convenient source for this information we have included it on the recently updated Civil Works Construction web page. Included is a brief description of the required procedure and hotlinks to EP 415-1-5 "Construction Contracts - How to obtain construction contracts with the U.S. Army Corps of Engineers" and to SF 129. The address of the Civil Works Construction web page is http://www.usace.army.mil/inet/functions/cw/cecwe/opconst.htm.

POC: ALLEN HURLOCKER, CECW-EC, 202-761-8831

Return to Index of Articles

RELEASE 2.0 OF CADD DETAILS LIBRARY AVAILABLE

Release 2.0 of CADD Details Library will be available on CD-ROM from the Tri-Service CADD/GIS Technology Center the end of March. The CD will have a new CADD Details Manager for both MicroStation and AutoCAD. The CADD Details Manager on release 1.0 had the details sorted by CSI UniFormat categories; the new Manager allows the user to locate details based on disciplines. Release 2.0 will contain updated versions of details contained in Version 1.0 as well as added Landscape Architecture, Interior Design, Telecommunications, Structural and Civil/Site details. As part of the continuing move toward metrication, 100 architectural details from Version 1.0 will be included in both metric and imperial formats. Also, all hardcopy reports that were distributed with Version 1.0 will be contained on the CD in .pdf format as well as the Acrobat Reader for reviewing and printing these reports.

The CADD Details Library can be viewed and downloaded from the Internet at http://cadlib.wes.army.mil. If you would like to acquire a CD of the Tri-Service CADD Details Library, please contact the Tri-Service CADD/GIS Technology Center by one of the following ways:

- Phone: Call 601-634-3104 (Stephen Spangler; please leave your complete mailing address if you get the voicemail system)
- E-mail: spangls@ex1.wes.army.mil

POC: JEAN MCGINN, CEMP-EE, 202-761-1052

Return to Index of Articles

RELEASE 1.8 OF TRI-SERVICE SPATIAL DATA STANDARDS (TSSDS) AVAILABLE

Release 1.8 of the TSSDS has been completed and is available for download from the Tri-Service CADD/GIS Technology Center (the Center) Web Site (tsc.wes.army.mil). A CD of TSSDS Release 1.8 will be sent to all Division/District/Center Commanders/Laboratory Directors, as well as all Geographic Information Systems (GIS) POC's on the Center's list in late March. ER 1110-1-8156, Policies, Guidance and Requirements for Geospatial Data and Systems, 1 Aug 96, mandates that the TSSDS be used as the data content standards for all GIS developed by the Corps.

If you would like to acquire a CD of the TSSDS, please contact the Center by one of the following ways: 1)By Phone: Call 601-634-4572 (Bobby Carpenter; please leave your complete mailing address if you get the voicemail system) or 2) By E-mail: carpenb@ex1.wes.army.mil.

POC: JEAN MCGINN, CEMP-EE, 202-761-1052

INITIATION OF RISK ANALYSIS FOR DAM SAFETY R&D PROGRAM

A new Research and Development (R&D) program entitled "Risk Analysis for Dam Safety" has been initiated under the "Risk Analysis for Civil Works Projects" Study Area. This will be the first year of a projected 5-year research program aimed at providing risk analysis tools for use in making investment decisions in the Dam Safety Assurance Program (DSAP). The new R&D program will provide a risk analysis framework and tools to be used by USACE project managers, engineers, and decision-makers, in the DSAP to evaluate existing dams and prioritize potential projects.

A workshop was held on 23-25 February 1999 at the Waterways Experiment Station to kickoff the new Risk Analysis for Dam Safety R&D program. Representatives of USACE Districts, federal agencies, private consultants and universities provided an update of their experience with risk analyses and an overview of the current state-of -the art in risk analyses as applied to dam safety. Attendees were then separated into three teams to evaluate the proposed R&D program and work statements. These teams reviewed the proposed work statements, developed revised or new work statements, and established priorities for future direction of the program. The workshop afforded the attendees the opportunity to discuss their concerns with respect to implementation of risk analysis in the DSAP with representatives from HQUSACE and leaders in the field of risk analysis.

While most USACE structures have not been subjected to their maximum design conditions, 65 of the Corps 569 dams have been identified as being hydrologically or seismically deficient. Approximately 64 % of USACE dams are over 30 years old; and 28% have reached or exceeded their 50-year design life. Many of these older structures may need major repair or rehabilitation to ensure their continued safety for future generations, and decision-making procedures are necessary to prioritize these potential projects. Federal and state agencies responsible for the design, construction, operation or regulation of water resource projects have recognized the need for making sound investment decisions regarding dam safety and have been searching for a systematic method for prioritizing needed repairs to dams. The Federal Coordinating Council for Science and Technology Policy, (FCCSET), Office of the Science and Technology Policy (OSTP) is placing increasing emphasis on having all Federal agencies present their annual programs and budgets using a risk based approach.

Risk analysis provides a systematic tool for understanding and dealing with the uncertainties involved in assessing the risks and potential impacts of dam safety related issues. A major goal of this approach is to attain the greatest risk reduction to the public with available resources. Risk analysis methods developed by the new R&D program will enable USACE to prioritize dams requiring initial investigations and subsequent analyses. The methods will also be used to prioritize funding for repairs, rehabilitation or modifications; select and justify the optimal plan to protect human life, reduce property damage, mitigate environmental damage; and maximize effectiveness of infrastructure investments.

POC: JERRY FOSTER, CECW-ET, 202-761-8676

Return to Index of Articles

AVAILABILITY OF MECHANICALLY STABILIZED EARTH WALLS SOFTWARE (MSEW 1.0)

ADAMA Engineering, Inc. developed the subject computer program, under a contract of the Federal Highway Administration (FHWA). MSEW can be applied to walls reinforced with geogrids, geotextiles, wire mesh, or metal strips. It is suitable for highway structures; it may not be entirely applicable to the Corps structures, which would be subjected to sudden drawdown or wave action. MSEW is password-protected. The FHWA provides the Corps a limited number of the copies of the program free of charge. If you need this program for the current or future project, please contact Geotechnical and Materials Branch.

POC: JIM CHANG, CECW-EG, 202-761-0419

HAVE RECENT CHANGES IMPACTED THE CORPS CONTRACT ADMINISTRATIVE CAPABILITIES?

What has been the impact of downsizing, reorganization and fielding of CEFMS and RMS on the Corps capability to perform its construction contract administrative responsibilities? How has this impacted the product we deliver to our customers? These questions have been raised at Headquarters and we would like input on these issues from the field. We have been losing many of our "old-time" contract administration personnel due to retirement and early outs. The implementation of CEFMS has transferred many of the data input functions, which were previously performed in the district out to the field offices. The fielding of RMS, which is intended to improve efficiency, will also require more data entry and changes in procedures in the area/resident offices. Have all of these changes contributed to eroding the Corps ability to perform its construction contract administrative functions in the professional manner that we expect? If it has what are your suggestions for corrective action before it causes serious problems? Or have these changes enhanced our capability to deliver our customers projects? Your comments on changes, which have added value, should also be included. Please provide you input via e-mail to Mr. Wilford, CEMP-EC, and/or Mr. Ken Buck, CECW-EC.

POC: TERRY WILFORD, CEMP-EC, 202-761-8652

Return to Index of Articles

WATER RESOURCES DEVELOPMENT ACT OF 1999

The 105th Congress ended without enactment of a Water Resources Development Act (WRDA) – only the second time a biennial WRDA has not been passed since 1986. WRDA 98 did not become a reality because Congress could not reach a compromise on flood control for Sacramento.

The outlook for enactment of a WRDA in 1999 is promising. The leadership of both the House Subcommittee on Water Resources and Environment and the Senate Committee on Environment and Public Works have signaled their intent to pass a WRDA early in the first session. At this writing, Senator Chafee is expected to introduce a technical revision of Senate-passed WRDA 1998 on 2 March 1999. Full committee markup could take place as early as 11 March.

At a 10 February 1999 hearing, Mr. Sherwood Boehlert, Chairman of the House Subcommittee, indicated strong support for enacting a WRDA early in this session to complete the unfinished business of the last Congress. He also expressed the commitment to enacting a WRDA 2000 based on the Administration's making a formal proposal. Testifying before the

WATER RESOURCES DEVELOPMENT ACT OF 1999 (CONTINUED)

Subcommittee, Assistant Secretary of the Army for Civil Works, Dr. Joseph Westphal, assured Chairman Boehlert the Administration supports a WRDA and that the Army's WRDA 1998 proposal continues to represent Administration positions on nonstructural flood control (Challenge 21), cost sharing for shore protection projects and a number of other topics. At this time, the House was preparing its WRDA bill but had not scheduled introduction or markup.

For updates on legislative activities affecting the Corps, please visit the following Internet site: http://www.usace.army.mil/inet/functions/cw/cecwa/leginfo.htm.

POC: LARRY PRATHER, CECW-AL, 202-761-0119

Return to Index of Articles

DAM SAFETY TECHNICAL SEMINAR

On February 17-19, 1999, a seminar on "Piping Associated with Conduits through Embankment Dams" was held at the FEMA Emergency Management Institute located at Emmitsburg, Maryland. Moderators for the session were Dr. J. Michael Duncan, and Dr. James K. Mitchell, Co-Directors of the Center for Geotechnical Practice and Research at VPI. There were a total of 179 participants from many different engineering organizations, both Federal and non-Federal, and a number of University students. Of those, 29 participants were from various Corps MSC's and Districts, as well as HQ. Seven Corps MSC's were represented but only 15 Districts had representation. The Corps also had an active part in class presentations. The Interagency Committee on Dam Safety (ICODS), which consists of representatives from 10 different Federal departments and agencies, develops these Technical Seminars. This was the sixth seminar of this type dealing with dam safety. Through presentations and conference materials, participants gain a better understanding of the latest information about the problems and methods of remediation. These strategies are critically important as our Nation's hydraulic structures continue to age. I ask that all of you, involved in the design or remediation of water retention structures such as dams and levees for the Corps, be on the alert and made aware of these seminars. The lessons learned and feedback exchanged is invaluable to our profession. The time-spent attending is well worth it.

POC: PHILIP M. BROWN, CECW-E, 202-761-4536

Return to Index of Articles

FY99 CORPS WIDE CONFERENCES – CLARIFICATION

The purpose of this article is to provide additional information on the intended audiences for two of the FY99 Corps Wide Conferences. The article was prepared because of questions that we have been receiving about the conference in St. Louis that starts on 22 March.

The Joint Environmental, Engineering, and Construction Conference, "Gateway to the New Millennium", is scheduled for 22-26 March 1999 in St. Louis. This conference has three tracks or sessions as follows:

Environmental – HTRW, Superfund, and other environmental cleanup activities

Engineering – **Architectural only**

Construction – Area and Resident Office concerns (old Area and Resident Engrs Conf)

FY99 Corps Wide Conferences – Clarification (continued)

The March conference in St. Louis is NOT a replacement for the previous Chiefs of Engineering and Construction conference.

The Project Development Team (PDT) Conference is scheduled for 12-16 July 1999 in St. Paul. This conference is a **new** conference (first held last year) which is the replacement for all the "stovepipe" conferences. The general focus of this year's conference will be the PDT in construction and operations.

There will be a Chiefs of Engineering and a Chiefs of Construction session at the PDT conference in July. **Mr. Enson is requesting that all Engineering and Construction Chiefs plan to attend the PDT conference.**

If you have any additional questions please contact either Phil Brown (202-761-4536) or Charles Pearre (202-761-4531) by telephone or E-mail.

POC: Charles Pearre, CECW-EP, 202-761-4531

Return to Index of Articles

CP18 Annual Screening Panel

The 1999 CP18 Annual Screening Panel is scheduled for 6 May 1999. This is an excellent opportunity to get rated for GS-14 and 15 level positions in CP18.
If you are not in the system, you should get in as this way you can be considered when vacancies occur. You never know when the "perfect" job will appear. If you are already in the inventory, you need not submit anything unless you want to add referral categories you don't now have or are now eligible for promotion. In any case, this is a good time to update your 2302 and make sure that CEHR-C has a current one on file.

The formal message to all activities is located on the CP18 Homepage at: http://www.hq.usace.army.mil/cehr/c/reg.htm. The Internet site also includes the necessary forms and instructions.

For individuals at HQUSACE the suspense date for submitting your completed package is 19 March 1999. Individuals in other offices should check the suspense date with your local career program manager.

If you have any questions, I'll be glad to try to answer them or you can get in touch with John D'Aniello, the HQ Staff Career Program Manager for CP18.

POC: Harry Kitch, CECW-PC, 202-761-1969

Return to Index of Articles

USACE Registry of Consultants (RoC)

On 4 March 1999, MG Genetti approved the RoC for USACE - wide implementation. Please see the briefing charts at http://www.hq.usace.army.mil/cemp/c/cemp-c.htm (*under Technical Information*) for more information. According to MG Genetti, there will not be a test period and implementation will begin as soon as the web site is ready - expected within six months. Comments are welcome and should be sent to Ray Navidi, ray.g.navidi@usace.army.mil

POC: Ray Navidi, CEMP-ET, 202-761-0223

Return to Index of Articles

DEATH OF MARSHALL J. SPENCER

Marshall J. Spencer, a retired Los Angeles District Corps employee passed away on February 4, 1999. Mr. Marshall had a stroke in November 1998. He is survived by his wife of 36 years, Birsen; his two daughters, and his son.

Mr. Marshall retired from the Corps in April 1997 after having been diagnosed with spinal cancer. At his retirement, he was project geologist at Seven Oaks Dam, California. Mr. Marshall had a long career with the Corps of Engineers and with Harza Engineering of Chicago, Illinois. His first tour of duty with the Corps was with the San Francisco District working on Warm Springs Dam. From there he obtained a position with Harza and his family moved to projects in Akra (Ghana), Paraguay and Dakar (Senegal). In 1981, Marshall returned to the Corps and accepted a position at the Walla Walla District. In 1982 the Spencer family again moved, this time to Puerto Rico where Marshall worked on the Corps construction site at Cerrios Dam until 1991 when he became project geologist at Seven Oaks Dam.

We will miss him....

POC: TERRY M. KING, CESPL-CO-GS, 909-794-7704

Return to Index of Articles